

Submission of a clean set of pending claims, consolidating all previous amendments.

1. (Three times amended) A method for treating a bone defect, comprising:
identifying a bone site suitable for receiving an implant; and
introducing a strongly resorbable, synthetic poorly crystalline apatitic (PCA) calcium phosphate at the implant site, the PCA calcium phosphate have a calcium to phosphate ratio (Ca:P) in the range of 1.2-1.68 and characterized by an X-ray diffraction pattern similar to naturally occurring bone and substantially as shown in Figure 3c, whereby the implanted PCA calcium phosphate is resorbed with a resorption rate characterized in that, when placed in a rat intramuscular site, at least 1 g of the PCA calcium phosphate is at least 80% resorbed within one year, and bone is formed at the implant site.

2. (Four times amended) A method for treating a bone defect, comprising:
identifying a bone site suitable for receiving an implant;
introducing a paste at the implant site, the paste comprising an amorphous calcium phosphate, an acidic second calcium phosphate and a physiologically acceptable fluid of an amount to provide a paste of formable or injectable consistency; and
hardening the paste *in vivo* at the implant site wherein the hardening process is associated with an endothermic reaction, whereby bone is formed at the implant site.

3. The method of claim 1, wherein the poorly crystalline apatitic calcium

phosphate is introduced in the form selected from the group consisting of paste, putty and preshaped object.

5. (Amended) The method of claim 2, wherein said paste is injectable for a time greater than about 10 minutes at about 25°C, hardens within about 10 to 60 minutes at about 37°C.

7. The method of claim 1, wherein the strongly bioresorbable, poorly crystalline apatitic calcium phosphate has an x-ray diffraction pattern comprising broad peaks at 2θ values of 26°, 28.5°, 32° and 33°.

9. The method of claim 1, wherein the strongly bioresorbable, poorly crystalline apatitic calcium phosphate is characterized in that, when placed in a rat intramuscular site, resorption of at least 1 g of the material is at least 80% resorbed within one month.

10. The method of claim 1 or 2, wherein the implant site comprises a tooth socket.

11. The method of claim 1 or 2, wherein the implant site comprises a non-union bone.

12. The method of claim 1 or 2, wherein the implant site comprises a bone prosthesis.

13. The method of claim 1 or 2, wherein the implant site comprises an osteoporotic bone.

14. The method of claim 1 or 2, wherein the implant site comprises an intervertebral space.

15. The method of claim 1 or 2, wherein the implant site comprises an alveolar ridge.

16. The method of claim 1 or 2, wherein the implant site comprises a bone fracture.

22. (Amended) The method of claim 2, wherein the acidic calcium phosphate has a pH of 5-7.

23. (Amended) The method of claim 2, wherein the acidic second calcium phosphate is selected from the group consisting of calcium metaphosphate, dicalcium phosphate dihydrate, heptacalcium decaphosphate, tricalcium phosphate, calcium pyrophosphate dihydrate, crystalline hydroxyapatite, calcium pyrophosphate, monetite, octacalcium phosphate, and PCA calcium phosphate.

25. (Twice amended) A method for embedding a prosthetic device, comprising:

introducing a prosthesis at an implant site;

applying a paste to a surface of the prosthesis, the paste comprising an amorphous calcium phosphate and an acidic second calcium phosphate and a physiologically acceptable fluid of an amount sufficient to provide a paste of formable or injectable consistency, whereby the paste is converted at the implant site to a hardened calcium

phosphate product in a hardening process associated with an endothermic reaction; and

allowing the hardened calcium phosphate to be resorbed and replaced thereby with bone.

26. (Twice amended) A kit for preparing an embedded prosthetic device, comprising:

a prosthesis;

a powder comprising an amorphous calcium phosphate and an acidic second calcium phosphate; and

a physiologically acceptable fluid.